DOCUMENT RESUME

ED 243 910 TM 840 119

AUTHOR Harmon, David J.
TITLE The Polaris Project: 1982-83. Evaluation Report. Technical Report No. 10.
INSTITUTION Kanawha County Schools, Charleston, WV. Dept. of Research and Evaluation.
PUB DATE 10 Aug 83
NOTE 50p.
PUB TYPE Reports - Evaluative/Feasibility (142)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Academic Achievement; Educational Objectives; *Grade 1; *Grade Repetition; Intervention; *Low Achievement; Primary Education; *Program Evaluation; Program Improvement; Statistical Analysis
IDENTIFIERS *Kanawha County Schools WV; *Polaris Project

ABSTRACT

The Polaris Project was conducted with first year students in the Kanawha County Schools. This study was designed to support educational planning and decision-making through systematic evaluation. Data concerning three of the Polaris Project objectives were analyzed. These objectives included: helping students progress/achieve beyond expectations; reducing retentions at the first grade level; and reducing referrals to the Office of Exceptional Children. The results of this study indicated that, overall, the project did not achieve its objectives. Several recommendations were made for the successful accomplishment of program objectives. Appendices gave scores for students identified by the project, comparisons of high and low project success schools, Chi-square analysis of retention rates, and first grade retention rates by school. (DWH)

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Research and Evaluation Bulletin

The Polaris Project 1982-1983

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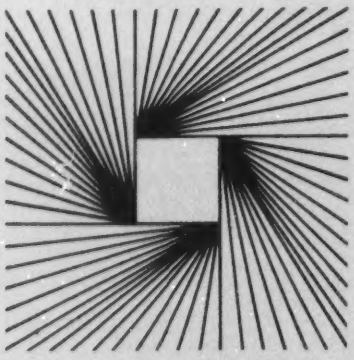

Kanawha County Schools

Department of Research and Evaluation

TM 840 115

THE POLARIS PROJECT: 1982-83

EVALUATION REPORT

PREPARED BY

Dr. David J. Harmon, Director
Department of Research and Evaluation

August 10, 1983

KANAWHA COUNTY SCHOOLS
DIVISION OF
SYSTEM MANAGEMENT

Mrs. Charlene Byrd, Associate Superintendent

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INTRODUCTION

The major purpose of this study is to support educational planning and decision-making thrcugh systematic evaluation. The primary levels of decision-making being served by this evaluation are the Superintendent of Kanawha County Schools, the Associate Superintendent of Curriculum and Instruction and the Director of Elementary Instructional Services. In addition, Curriculum Supervisors and elementary school staff members should find this document quite useful.

The Polaris Project, which was initially implemented during the 1982-83 school year, was designed to help each student succeed in his/her first full year in Kanawha County Schools. Specifically, the purposes of the project were to: (1) help students progress/achieve beyond expectations; (2) reduce the number of retentions at the first grade level; (3) reduce the number of referrals to the Office of Exceptional Children; (4) enhance students' self-image; and (5) instill a positive attitude toward the school experience. Data concerning the first three objectives are analyzed and reported in this document. A complete written description of the project is available from the Division of Curriculum and Instruction.

The remaining narrative portion of this document will be presented under three major headings: (1) methodology; (2) results and discussion and (3) conclusions and recommendations. Methodology will be briefly presented in four sections: (1) project participation; (2) project implementation; (3) instrumentation; and (4) data analysis. The first three sections under the results and discussion heading correspond to the first three project objectives. The fourth section lists project "pros" and "cons" based on a

discussion with members of the Department of Elementary Instructional Services. Conclusions and recommendations are listed under the final major heading.

METHODOLOGY

Project Participation

The project identified and served (i.e., at least one prescription) 550 first grade students. Twenty-four of the identified students moved out of Kanawha County during the school year. Twenty-seven students transferred to other schools in Kanawha County. About 37% of the "transfers" were listed as Polaris students at two schools. It is not known whether or not the other 63% of the "transfers" received Polaris Project services at their second school. No students were identified at eight elementary schools. Complete test data were not available for any project students enrolled at five other schools. On the average, eight students were identified per school. Twenty or more students were identified for project participation at five schools. One to five students were identified at 37 schools.

Project Implementation

The major source of project implementation data was the Supervisor Implementation Form (SIF). The SIF data were maintained under the direction of the Department of Elementary Instructional Services and submitted to the Department of Research and Evaluation for analysis and reporting. The information presented in the preceding section was based on the SIF data. A main purpose of maintaining the SIF records was to assess the degree of project implementation (i.e., process evaluation). Such information is vital to understanding the project's success in meeting objectives. Although the SIF data includes prescription dates, no methods were used to monitor the actual implementation of the prescriptions. There is probably a discrepancy between recommended retentions (SIF) and actual retentions.

Within the limitations of the SIF data, there appears to be one major difference between the project's design and the project's implementation. Under Star Point III of the project plan (page 4), the author states that, "a conference should be held with the parents at the earliest possible time and before prescriptions are in place." Additionally, parents were to be given specific home activities designed to help the children succeed. The "Parent Conference" column of the SIF was checked regarding only 14% of the students. Five of the conferences were conducted after January, 1983 and several conference dates appeared to correspond to special education referral dates.

Instrumentation

Level II Form P of the Metropolitan Readiness Tests (MRT) is administered in May to all kindergarten students. The MRT is part of the Local Testing Program. The tests were administered and scored by the kindergarten teachers. The scores are listed and forwarded to the Department of Guidance, Counseling and Testing. The following tests are included as part of Level II: (1) Beginning Consonants; (2) Sound-Letter Correspondence; (3) Visual Matching; (4) Finding Patterns; (5) School Language; (6) Listening; (7) Quantitative Concepts; and (8) Quantitative Operations. The tests purport to measure the skills needed for beginning reading and mathematics. Collectively, the first six tests yield the Pre-Reading Skills Composite scores. The MRT data were used in the identification of students for project participation (i.e., students in the lower three stanines) and in the determination of expected first grade reading achievement scores.

The MRT data were used only to alert professional personnel to the possibility of student deficiencies. Before project placement, the

kindergarten teachers, the first grade teachers and the principals were asked to exercise professional judgment based on their experiences with the students to concur or refute the implications of the test data. If the test data suggested deficiencies and judgment did not indicate deficiencies, the student was not supposed to be placed in the project. In addition, students could be placed in the project based solely on professional judgment (e.g., students without MRT scores and students with deficiencies noted by the teachers, but not by inspection of the MRT scores). The Pre-Reading Skills Composite scores were used to calculate predicted CTBS Total Reading scores.

Level C Form U of the Comprehensive Tests of Basic Skills (CTBS) is administered in March to all first grade students. Scoring was managed through the Department of Guidance, Counseling and Testing. Total Reading scores were used in the evaluation of the first project objective. The Total Reading score is a combined score consisting of the average of individual scale scores in Vocabulary and Reading Comprehension. The Vocabulary test contains 25 items that measure the student's ability to identify the word that is associated with an orally presented category or definition. The test also includes items that measure same-meaning words and unfamiliar words in context. The Reading Comprehension test contains 25 items that measure comprehension of sentences and stories. In some items, the student identifies the picture that shows the meaning of a written sentence. In other items, the student identifies details and ideas in written passages.

Data Analysis

This section is limited to a discussion of selected data analysis procedures that were utilized in the evaluation of Objective 1 (i.e., students will achieve beyond expectations). Other procedures regarding Objective 1 and procedures, which were used to evaluate Objectives 2 and 3, were adequately discussed in the text of the Results and Discussion section. The Department of Elementary Instructional Services provided the necessary test scores (i.e., Pre-Reading Skills Composite raw scores and Total Reading raw scores) of 339 (62%) of the 550 Polaris Project students. The missing scores reduce the worth of the results.

Raw Score to T-Score Transformations. Using the raw score means and standard deviations from the MRT and CTBS national norms, all raw scores were converted to T-scores. T-scores are standard scores with a mean of 50 and standard deviation of 10. Standard scores provide more nearly comparable values between tests than do raw scores. The T-scores were also used to calculate predicted CTBS Total Reading scores.

Predicted/Expected CTBS Total Reading Scores. Linear regression was used to obtain predicted first grade CTBS Total Reading scores. The Pre-Reading Skills Composite T-scores (MRT) served as the independent/predictor variable and the actual CTBS Total Reading T-scores were used as the dependent variable. The prediction equation is given below.

$$Y' = 21.253 + 0.403 (X)$$

Y' = predicted CTBS Total Reading score.

X = Pre-Reading Skills Composite T-score (MRT).

The predicted and actual Total Reading scores were compared as an indicator of the project's success in meeting Objective 1. The standard error of estimate was 7.84. The size of the standard error of estimate is at least partially due the relatively low, but statistically significant ($p \leq 0.05$) correlation (r=0.328) between the MRT and CTBS scores. Only about 11% (i.e., the coefficient of determination) of the differences in CTBS Total Reading scores could be explained by differences in MRT Pre-Reading Skills Composite scores. Ideally, prediction error would be less.

Potential Confounding Effects of Chapter I. During the 1982-83 school year, 688 first grade students in 37 schools participated in Chapter 1. About 57% (193) of the 339 Polaris students with complete test scores participated in Chapter 1. The results of several statistical procedures (i.e., multiple correlation, correlation, partial correlation, t-test, and 2x2 chi-square) suggested that participation in Chapter 1 did not influence the prediction of CTBS Total Reading scores. There was little difference between the multiple correlation coefficient (R=0.332), which included participation in Chapter 1 as a binary variable, and the simple correlation (r = 0.328) between MRT and CTBS scores. The correlation (-0.115) between actual CTBS Total Reading scores and participation in Chapter 1 was not significant ($p \leq 0.05$). About 1% of the differences in the CTBS Total Reading scores of Polaris students could be attributed to participation in Chapter 1. The correlation between CTBS and MRT scores while controlling for participation in Chapter 1 was 0.314. The slight change from the original CTBS/MRT correlation (r=0.328) indicates that the CTBS/MRT relationship was independent of participation in Chapter 1. About 35% of the

Chapter 1/Polaris Project students showed CTBS Total Reading T-scores that were greater than their MRT Pre-Reading Skills Composite T-scores. About 28% of the "Polaris only" students showed such gains. However, a nonsignificant ($p \leq 0.05$) chi-square value (2.477) indicates that gains were independent of Chapter 1 participation. About 45% of the Chapter 1/Polaris Project students and 49% of the "Polaris only" students showed actual CTBS Total Reading scores that were greater than their predicted CTBS Total Reading scores. A nonsignificant ($p \leq 0.05$) chi-square value (0.554) indicates that positive differences between actual and predicted scores could not be simply explained by participation in Chapter 1. The results of a t-test indicates that there was no significant ($p \leq 0.05$) difference in the CTBS Total Reading means between Chapter 1/Polaris participation and "Polaris only" participation. Perhaps this section suffers from statistical overkill, but concern for the potentially confounding effects of Chapter 1 was reduced. Please note that no insight regarding the effects of Chapter 1 can be discerned from the findings in this section.

RESULTS AND DISCUSSION

Objective #1

The objective, which states that students will achieve beyond expectations, was not supported by the county-level data. About 46% of the Polaris students had actual CTBS Total Reading scores that were greater than their predicted/expected CTBS Total Reading scores. When first grade CTBS and kindergarten MRT scores were converted to a common scale, only 31% of the students had CTBS scores that were greater than their MRT scores. On the average, the students' relative standing in the MRT norm (i.e. approximately the 21st percentile) was greater than their relative standing in the CTBS norm (i.e., approximately the 17th percentile). It was assumed that without intervention students would remain at the same position in the norm. Table 1 presents the means for the aforementioned comparisons.

TABLE 1

COMPARISONS: ACTUAL-PREDICTED CTBS MEANS AND ACTUAL CTBS - MRT MEANS

	Comparison #1		
	CTBS Actual -	CTBS Predicted	Difference
Mean	37.79	37.78	-0.01
Standard Deviation	8.30	NA	
	Comparison #2		
	CTBS Actual -	MRT	Difference
Mean	37.79	41.00	-3.21
Standard Deviation	8.30	6.76	

Inspection of the means indicates that additional statistical analysis is not warranted. Appendix A includes a list of raw scores, T-scores, predicted scores, actual minus predicted CTBS Total Reading scores, CTBS Total Reading scores minus MRT scores, and cumulative differences between the CTBS Total Reading scores and the MRT scores. The list includes all available data.

Table 2 lists the following for each school: (1) the number and percentage of students with greater actual than predicted CTBS Total Reading scores; (2) the number of students with educationally significant gains; and (3) the number of students with educationally significant losses. Column 2 (i.e., Student Numbers) refers to the numbers printed on the horizontal axes of Figures 1-7. For example, Figure 1 displays the actual minus predicted CTBS Total Reading scores for the first 53 students (i.e., students from 11 schools, alphabetically listed from Alum Creek through Buena Vista). More specifically, scores 1-11 on Figure 1 were the actual minus predicted scores of the 11 Polaris students enrolled at Alum Creek Elementary School. In regard to Figures 1-7, shaded areas above zero equal gains (i.e., actual CTBS Total Reading scores greater than predicted CTBS Total Reading scores) and shaded areas below zero equal losses (i.e., predicted CTBS Total Reading scores greater than actual CTBS Total Reading scores). The magnitude of the shaded area indicates the amount of gain or loss. Column 6 (i.e., ACT - PRED CTBS) of Appendix A lists the differences between actual and predicted scores that were plotted on Figures 1-7.

TABLE 2

SUMMARY OF SCHOOL DATA

ACTUAL - PREDICTED CTBS SCORES

Figure # School Name - N [a]	Student Numbers	Act. > Pred. Scores #	Act. > Pred. Scores %	Ed. Sign Gain(.8SEE)	Ed. Sign Loss(-.8SEE)
Figure #1					
Alum Creek - 11	1-11	6	54.6	2	2
Andrews Heights - 5	12-16	2	40.0	1	1
Anne Bailey - 11	17-27	7	63.6	6	1
Baker - 2	28-29	1	50.0	1	1
Belle - 1	30	1	100.0	0	0
Belvil - 4	31-34	2	50.0	1	1
Big Chimney - 2	35-36	1	50.0	0	1
Bonham - 6	37-42	1	16.7	1	2
Boreman - 4	43-46	2	50.0	0	0
Bridge - 5	47-51	3	60.0	1	2
Buena Vista - 2	52-53	0	0.0	0	2
Figure #2					
Cedar Grove - 11	54-64	2	18.2	0	4
Central - 4	65-68	2	50.0	1	0
Chamberlain - 7	69-75	3	42.9	2	1
Chandler - 18	76-93	0	0.0	0	12
Chelyan - 5	94-98	2	40.0	2	2
Chesapeake - 5	99-103	2	40.0	1	0
Figure #3					
Clendenin - 4	104-107	2	50.0	0	2
Cross Lanes - 5	108-112	2	40.0	2	0
Dunbar - 5	113-117	2	40.0	0	2
Edison - 4	118-121	3	75.0	0	0
Elkview - 3	122-124	1	33.3	0	1
Fairview - 6	125-130	3	50.0	1	0
Flinn - 1	131	1	100.0	1	0
Ford - 5	132-136	3	60.0	2	0
Fort Hill - 2	137-138	2	100.0	2	0
Glenwood - 10	139-148	8	80.0	4	0
Grandview - 9	149-157	4	44.4	2	1

TABLE 2 (continued)

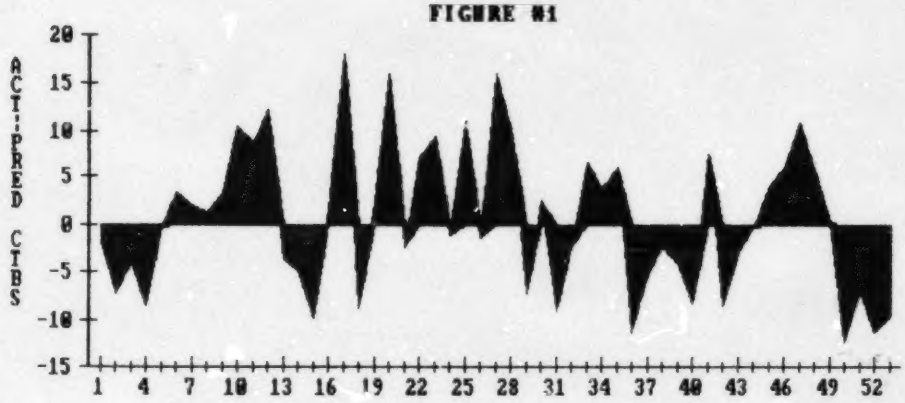
Figure # School Name - N [a]	Student Numbers	Act. > Pred. Scores #	Act. > Pred. Scores %	Ed. Sign Gain(.8SEE)	Ed. Sign Loss(-.8SEE)
Figure #4					
Grant - 4	158-161	4	100.0	4	0
Highlawn - 6	162-167	6	100.0	4	0
Holz - 1	168	1	100.0	0	0
Kanawha City - 7	169-175	4	57.1	1	1
Kenna - 3	176-178	0	0.0	0	0
Kenton - 1	179	0	0.0	0	1
Loudendale - 4	180-183	1	25.0	0	0
Malden - 3	184-186	2	66.7	0	0
Mary Ingles - 4	187-190	0	0.0	0	1
Midland Trail - 10	191-200	7	70.0	4	2
Montrose - 1	201	1	100.0	0	0
Figure #5					
Nitro - 12	202-213	0	0.0	0	7
Overbrook - 3	214-216	2	66.7	1	0
Piedmont - 11	217-227	3	27.3	0	2
Pinch - 6	228-233	3	50.0	2	0
Point Harmony - 3	234-236	2	66.7	1	0
Pratt - 8	237-244	6	75.0	3	0
Rand - 2	245-246	1	50.0	0	1
Richmond - 5	247-250	0	0.0	0	2
Figure #6					
Richmond (continued)	251	0	0.0	0	0
Robins - 2	252-253	2	100.0	1	0
Roxalana - 5	254-258	5	100.0	5	0
Ruffner - 1	259	1	100.0	0	0
Ruthlawn - 1	260	1	100.0	1	0
Sharon Dawes - 4	261-264	2	50.0	1	0
Shoals - 1	265	0	0.0	0	0
Sissonville - 21	266-286	13	61.9	5	4
Spring Hill - 5	287-291	5	100.0	3	0
Sugar Creek - 4	292-295	1	25.0	0	2

TABLE 2 (continued)

Figure # School Name - N [a]	Student Numbers	Act. #	Pred. Scores %	Ed. Sign Gain(.8SEE)	Ed. Sign Loss(-.8SEE)
Figure #7					
Taft - 11	296-306	4	36.4	0	2
Tyler - 5	307-311	2	40.0	1	1
Valley Grove - 3	312-314	0	0.0	0	1
Village - 4	315-318	1	25.0	0	2
Wallace Heights - 11	319-329	5	45.5	3	2
Watts - 5	330-334	2	40.0	1	2
Weimer - 2	335-336	0	0.0	0	2
Weberwood - 2	337-338	2	100.0	1	0
West Sattes - 1	339	0	0.0	0	0
TOTAL - N=339		157	46.3	75	73

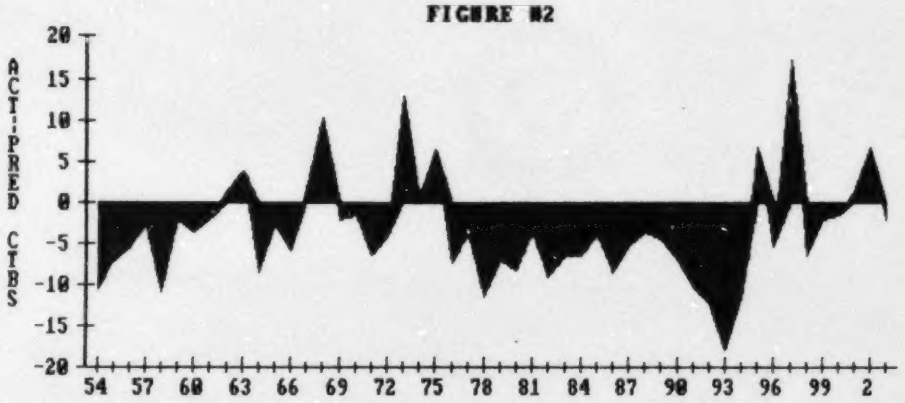
[a] N - Number of students with both MRT and CTBS Total Reading scores.

FIGURE #1



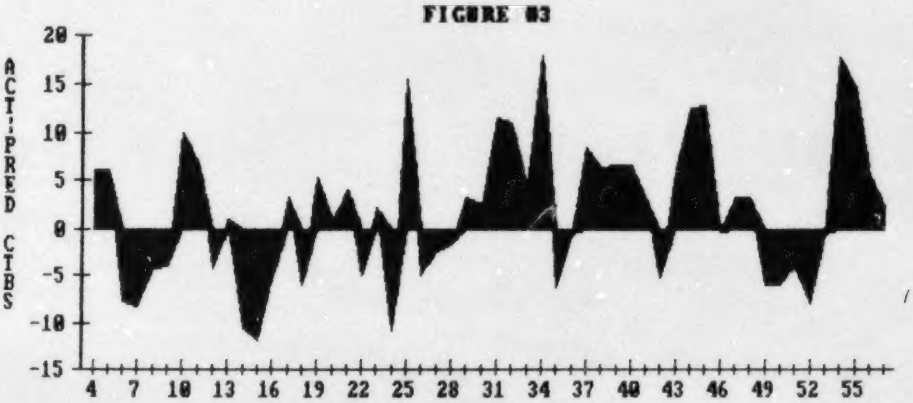
STUDENT NUMBERS(1-53)
ABOVE ZERO=GAIN
BELOW ZERO=LOSS

FIGURE #2



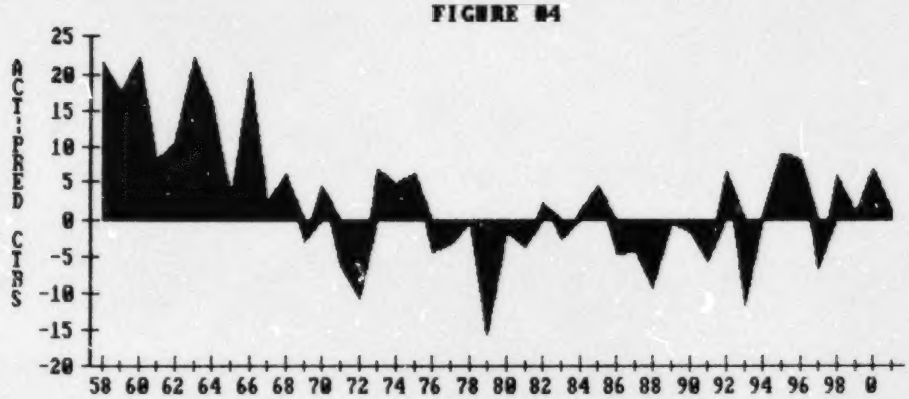
STUDENT NUMBERS(54-103)
ABOVE ZERO=GAIN
BELOW ZERO=LOSS

FIGURE #3



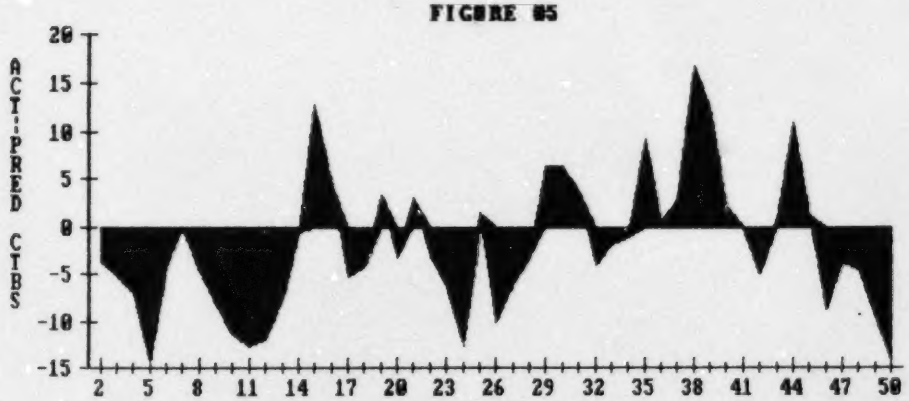
STUDENT NUMBERS(104-157)
ABOVE ZERO=GAIN
BELOW ZERO=LOSS

FIGURE #4



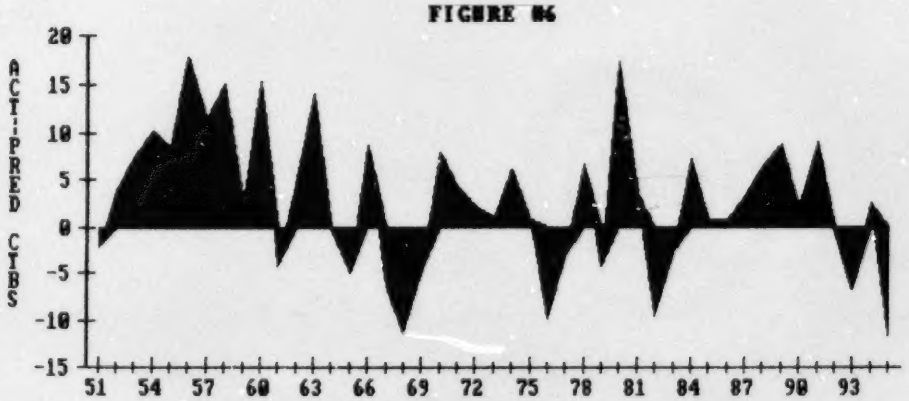
STUDENT NUMBERS(158-201)
ABOVE ZERO=GAIN
BELOW ZERO=LOSS

FIGURE #5



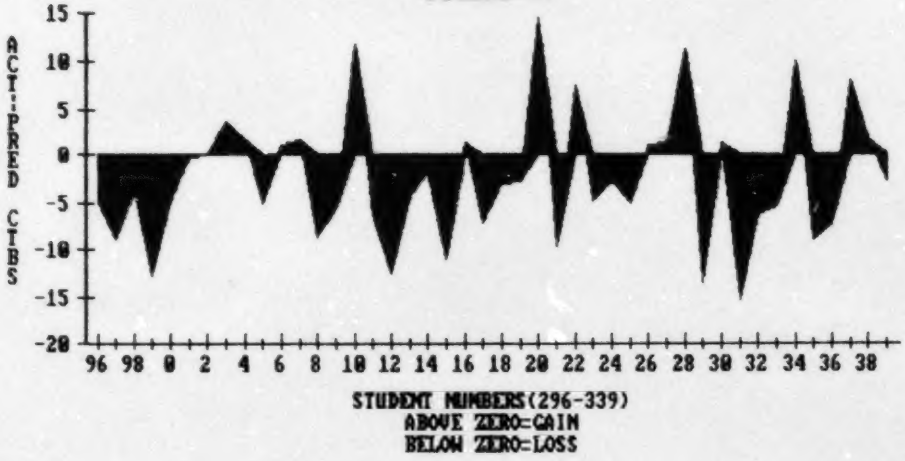
STUDENT NUMBERS(202-250)
ABOVE ZERO=GAIN
BELOW ZERO=LOSS

FIGURE #6



STUDENT NUMBERS(251-295)
ABOVE ZERO=GAIN
BELOW ZERO=LOSS

FIGURE #7



STUDENT NUMBERS(296-339)
ABOVE ZERO=GAIN
BELOW ZERO=LOSS

Table 2 and Figures 1-7 indicate that: (1) 100% of the students in 13 schools showed greater actual than predicted scores; (2) 100% of the students in 11 schools showed greater predicted than actual scores; (3) the number of students with educationally significant gains (i.e., 73 students had actual scores that exceeded their predicted scores by 6.28, which is 0.80 standard error of estimate) was slightly greater than the number of students with educationally significant losses (i.e., 73 students had predicted scores that exceeded their actual scores by 6.28); and (4) the percentages of students that gained or lost were not equally distributed across schools. It appears that the Polaris Project was successful at some schools and unsuccessful at other schools. The nine schools that appear to have had the best success and the nine schools that appear to have had the least success are listed in Table 3.

TABLE 3

RELATIVE SUCCESS WITH THE POLARIS PROJECT BY SCHOOL

HIGH SUCCESS	LOW SUCCESS
*Anne Bailey	*Bonham
*Edison	Cedar Grove
*Glenwood	*Chandler
*Grant	*Loudendale
High Lawn	*Mary Ingles
*Midland Trail	Nitro
*Pratt	*Richmond
Roxalana	Sugar Creek
*Spring Hill	Village

*Chapter 1 Schools

About 81% of the students in the "high project success" schools had actual CTBS Total Reading scores that were greater than their predicted CTBS Total Reading scores. Less than 10% of the students in the "low project success" schools showed greater actual than predicted scores. Additionally, less than 10% of the students in the "low project success" schools improved on the CTBS relative to their scores on the MRT. About 70% of the students in the "high project success" schools showed such improvement. The average CTBS Total Reading score for the "high project success" students (43.62) was significantly ($p \leq 0.05$) higher than the average score for the "low project success" students (31.68). See Appendix B.

Only schools that included at least four students with both MRT and CTBS Total Reading scores were listed in Table 3. The purpose for categorizing the schools is to explore reasons why some schools had better success with the project than others. If several consistently occurring reasons could be ascertained, plans for project improvement could then be formulated. Since five of the six supervisory areas were represented by in both "high project success" and "low project success" schools, the curriculum supervisors should have vital insight into the differences between the two categories of schools. The supervisors should compare the "high project success" and "low project success" schools regarding such areas as: (1) characteristics of the Polaris students; (2) the degree of prescription implementation; (3) the attitudes of the school staff members toward the project; and (4) the types of prescriptions and the approaches used to implement the prescriptions. These comparions are beyond the scope of this study. However, three comparisons are possible with available data. They will be discussed in the sections that follow.

Participation in Chapter 1. The majority of students in both the "high project success" and "low project success" schools participated in Chapter 1. The results of several statistical procedures (e.g., t-test, multiple correlation and partial correlation), which included 339 Polaris Project students, indicated that the differences in project success among schools cannot be explained by participation in Chapter 1. Additionally, the results of a t-test, which only included the 131 students from "high project success" and "low project success" schools, yielded no significant ($p \leq 0.05$) differences between Chapter 1 and non-Chapter 1 Polaris Project participants. See Appendix B. Since only 12% of the total number of Chapter 1

first grade students were included in either the high or low project success schools, the findings have no implications for the evaluation of Chapter 1.

Differences in Metropolitan Readiness Test Scores. The magnitude of the predicted CTBS Total Reading scores was based on the MRT scores. If the "high project success" students had significantly lower MRT scores than "low project success" students, then statistically regression (i.e., the tendency of extreme scores to migrate to the mean) may have accounted for some of the differences between high and low project success schools. If "low project success" students had significantly higher MRT scores than "high project success" students, then the predicted CTBS scores for the "low project success" students would be relatively higher than the predicted scores of the "high project success" students. Such a difference could have contributed to an overall difference in project success. However, there were no significant ($p \leq 0.05$) differences in MRT scores between high and low project success students. See Appendix B.

Differences in Number of Students Served. Since this was the first year of the project, there was no adequate method of determining how many students could realistically be served at a particular school. Significant differences in the number of students served at the high and low project success schools could help explain the differences in project success at those schools. However, there were no significant ($p \leq 0.05$) differences in number of students served between the high and low success schools. See Appendix B.

Summary Objective #1. Although the data cannot support the achievement of this objective at the county level, there is little doubt that the project was successful at some schools and not successful at other schools. Within the limitations of the data, nine "high project success" and nine

"low project success" schools were identified. It was determined that project success cannot simply be attributed to: (1) differences in curriculum supervisors; (2) participation in Chapter 1; (3) pre-project differences in MRT scores; and (4) differences in the numbers of students served at high and low project success schools. Hopefully, the elimination of these factors will help the Curriculum and Instruction staff determine the true correlates of project success.

Objective #2

The objective, which states that the number of retentions will be reduced at the first grade level, was not supported by the county-level data. The 1982-83 first grade retention rate (13.79%) was slightly higher than the 1981-82 first grade retention rate (13.67%). The data were obtained from the 1981-82 and 1982-83 County Superintendent's Annual Statistical Reports of the Elementary and Secondary Schools. The retention rate for each year was calculated by dividing the number of retentions by the total number of promotions and retentions. The results of a 2 x 2 chi-square analysis indicated that school years (i.e., 1981-82 without the Polaris Project and 1982-83 with the Polaris Project) and first grade retention rates were not related. Hence, school years did not differ significantly ($p \leq 0.05$) with respect to retention rate. The average 1982-83 retention rate for the "high project success" schools (14.8%) was slightly lower than their 1981-82 rate (15.1%). The average retention rate for the "low project success" schools increased from 18.9% (1981-82) to 23.3% (1982-83). These differences partially explain the significant ($p \leq 0.05$) retention rate differences between high and low project success schools. See Appendix C.

About 48.7% of the elementary schools showed lower 1982-83 than 1981-82 first grade retention rates. The 1982-83 first grade retention rates ranged from 0.00% to 35.56%. The 1981-82 rates ranged from 0.00% to 40.74%. About 20% of the schools had 1982-83 first grade retention rates that were greater than 20%. Nearly 18% of the schools showed 1981-82 retention rates greater than 20%. Four schools showed at least a 20% change in retention rates from 1981-82 to 1982-83. The school level retention rate data are listed in Appendix D.

According to the information on the Supervisor Implementation Form, 550 students were identified to participate in the Polaris Project. During the school year 24 students moved out of Kanawha County. About 41% of the remaining 526 students were recommended for retention. In summary, the various indicators provide no support for the achievement of Objective #2.

Objective #3

The degree of achievement of Objective #3, which states that the number of referrals to the Office of Exceptional Children will be reduced, cannot be determined at this time. Supervisor Information Form data indicates that 18.1% of the Polaris students were referred to the Office of Exceptional Children. According to a memo from the Director, Office of Exceptional Children to the Director, Department of Elementary Instructional Services (4/4/83), 141 (i.e., 4.3%) first grade students were referred to the Office of Exceptional Children as of 2/25/83. This information provides a partial basis of comparison for the 1983-84 evaluation. When the appropriate data are available, data analysis and reporting will continue.

Summary Conference/Supervisors' Commentary

On June 8, 1983, the curriculum supervisors, the Director of Elementary Instructional Services and the Director of Research and Evaluation met to discuss the Polaris Project. The Director of Elementary Services provided the following list of "pros" and "cons" regarding the project.

PROS

- Teachers learned more about children and their special needs
- Teachers need to meet together by supervisory area to develop own prescriptions
- Supervisors met with teachers to assist with instructional strategies
- Supervisors served as a sounding board
- Supervisors became familiar with first grade teachers and their needs
- Teachers have seen improvement although not sufficient for promotion
- Supervisors became aware of textbook inadequacies and applied knowledge during textbook selection
- Increased communications with parents of children enrolled in Polaris--encouraged counseling
- Stimulated regrouping for instruction
- Created a better understanding of instructional needs in kindergarten and first grade
- Students developed more independence
- Caused cooperation among kindergarten and first grade

CONS

- Polaris needed to begin earlier - materials used by teachers needed to be available earlier
- Supervisors did not have enough time to follow through properly. Lost time was attributed to textbook adoption, math field day and Social Studies Fair planning, etc.
- Supervisors had to neglect giving staff inservices at principal request as well as being unable to help with plans of assistance for classroom teachers
- There was not enough time for adequate observations during school classifications. Supervisors were required to assist in other supervisory areas thus neglecting their own.
- Students transferring from one school to another created a logistical problem
- Difficult scheduling was the rule with teachers unable to meet except during P.E., IMC, before or after school
- Some children did not attend kindergarten and entered first grade directly
- Caused grouping problems for some teachers

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Generalizations from this study are limited by the accuracy of data interpretations and by the population's characteristics. The results of this study seem to support the following conclusions:

1. Overall, the Polaris Project did not achieve Objective #1 (i.e., students will achieve beyond expectations) or Objective #2 (i.e., the number of retentions will be reduced at the first grade level).

2. Objective #1 was achieved at some schools.

Recommendations

1. High and low project success schools should be compared regarding such areas as: (1) characteristics of the Polaris students; (2) the degree prescription implementation; (3) the attitudes of the school staff members toward the project; and (4) the types of prescriptions and the approaches used to implement the prescriptions. If the project staff can discover why the project appeared to be more successful at some schools than at other schools, then plans for project improvement can be developed and implemented (1983-84).

2. If the project is extended to the second grade (1983-84) and maintained at the first grade, then the project staff should note the possible geometric increase in number of students to be served and the amount of necessary staff time. The 1983-84 project could include: (1) 1983-84 first grade students; (2) a high percentage of the retained 1982-83 first grade Polaris students (about 41% were recommended for retention); (3) some of the retained 1982-83 non-Polaris students; (4) second grade students

who were not exited from the first grade program; and (5) newly identified second grade students. In order to maximize the project's impact, the staff should consider the following: (1) determine how many students can be adequately served and limit the project's enrollment to that number; (2) refine and implement existing criteria for exiting the project and/or (3) establish more stringent criteria for selecting students, especially for Chapter 1 schools. Regulations demand that services provided at non-Chapter 1 schools must also be provided at Chapter 1 schools. However, it may be possible to serve only the students with extreme deficiencies at Chapter 1 schools.

3. The 1976 MRT was normed during the 1974-75 school year. Although statistically significant ($p \leq 0.05$), the correlation between the MRT (reading readiness) and the "new" form of the CTBS (reading achievement) was fairly low. The project staff, staff from the Department of Guidance, Counseling and Testing and the Department of Research and Evaluation should review the MRT to determine if the tests meet the informational needs of the project and/or the county.

4. If the project design remains basically unchanged, specific criterion levels for program objectives should be established, which are based on 1982-83 results. For example, at least 51% (i.e., a 5% increase from 1982-83) of the 1983-84 Polaris students will show actual CTBS Total Reading scores that are greater than their predicted CTBS Total Reading scores.

5. Although the project staff compiled a large body of useful information concerning the project's implementation, more information is needed concerning such critical components as: (1) actual implementation of

prescriptions; (2) home involvement and (3) nature of the identified deficiencies. In essence, the recommendation is to extend the process evaluation.

6. Usable test data were available for about 62% of all Polaris students. The percentage should increase for the 1983-84 school year.

7. The project staff and this researcher should clearly communicate to the Department of Pupil Services their informational needs concerning referrals of first and second grade students to the Office of Exceptional Children.

8. The Basic Skills Screening process (starting at grade three) is a fundamental component of the Competency Testing Program. Serious consideration should be given to at least articulating or possibly merging the two programs.

9. The Polaris Project staff and the many hard-working and cooperative teachers and principals should be acknowledged for their efforts to implement the project.

APPENDIX A

SCORES FOR 339 STUDENTS

1. Metropolitan Readiness Tests (Pre-Reading Skills Composite)
    a. Column 1 - Raw Scores
    b. Column 3 - T-Scores based on the Mean and Standard Deviation of the National Norm

2. Comprehensive Tests of Basic Skills (Total Reading)
    a. Column 2 - Raw Scores
    b. Column 4 - T-Scores based on the Mean and Standard Deviation of the National Norm

3. Predicted CTBS (Column 5 - Determined through Regression Analysis)

4. Actual Minus Predicted CTBS (Column 6 - Differences between Columns 4 and 5)

5. Gain CTBS Total Reading Minus MRT Pre-Reading Skills Composite (Column 7 - Differences between Columns 3 and 4)

6. Cumulative Totals of Column 7 (Listed in Column 8)

	METRO--RAW	CTBS R-RAW	METRO-T NAT	CTBS RD T NAT	PREDICTED CTBS	ACT-PRED CTBS	GAIN RD-MET	GAIN RD-MET.T
1	8.00	13.00	22.24	28.40	30.21	-1.82	6.16	6.16
2	27.00	13.00	35.52	28.40	35.57	-7.17	-7.13	-.97
3	43.00	21.00	46.71	35.93	40.08	-4.15	-10.79	-11.75
4	22.00	10.00	32.03	25.57	34.16	-8.59	-6.45	-18.21
5	29.00	21.00	36.92	35.93	36.13	-.21	-1.00	-19.20
6	30.00	25.00	37.62	39.69	36.41	3.28	2.07	-17.14
7	38.00	26.00	43.22	40.63	38.67	1.96	-2.59	-19.72
8	34.00	24.00	40.42	38.75	37.54	1.21	-1.67	-21.39
9	37.00	27.00	42.52	41.57	38.39	3.18	-.95	-22.34
10	41.00	36.00	45.31	50.04	39.51	10.53	4.73	-17.61
11	58.00	39.00	57.20	52.86	44.31	8.55	-4.34	-21.95
12	38.00	37.00	43.22	50.98	38.67	12.31	7.77	-14.19
13	31.00	18.00	38.32	33.10	36.70	-3.59	-5.22	-19.41
14	36.00	18.00	41.82	33.10	38.11	-5.00	-8.72	-28.12
15	36.00	13.00	41.82	28.40	38.11	-9.71	-13.42	-41.54
16	42.00	27.00	46.01	41.57	39.80	1.78	-4.44	-45.98
17	44.00	45.00	47.41	58.50	40.36	18.14	11.09	-34.89
18	56.00	20.00	55.80	34.99	43.74	-8.76	-20.82	-55.71
19	36.00	26.00	41.82	40.63	38.11	2.53	-1.19	-56.90
20	25.00	37.00	34.13	50.98	35.01	15.98	16.86	-40.04
21	40.00	22.00	44.62	36.87	39.23	-2.37	-7.75	-47.79
22	33.00	30.00	39.72	44.40	37.26	7.14	4.68	-43.11
23	25.00	30.00	34.13	44.40	35.01	9.39	10.27	-32.85
24	25.00	19.00	34.13	34.04	35.01	-.96	-.08	-32.93
25	33.00	34.00	39.72	48.16	37.26	10.90	8.44	-24.49
26	33.00	21.00	39.72	35.93	37.26	-1.33	-3.79	-28.28
27	25.00	37.00	34.13	50.98	35.01	15.98	16.86	-11.43
28	42.00	36.00	46.01	50.04	39.80	10.25	4.03	-7.40
29	54.00	21.00	54.41	35.93	43.18	-7.25	-18.48	-25.88
30	33.00	25.00	39.72	39.69	37.26	2.43	-.03	-25.91
31	40.00	15.00	44.62	30.28	39.23	-8.95	-14.34	-40.24
32	30.00	19.00	37.62	34.04	36.41	-2.37	-3.58	-43.82
33	38.00	31.00	43.22	45.34	38.67	6.67	2.12	-41.70
34	25.00	24.00	34.13	38.75	35.01	3.74	4.62	-37.08
35	43.00	32.00	46.71	46.28	40.08	6.20	-.44	-37.51
36	32.00	10.00	39.02	25.57	36.98	-11.40	-13.45	-50.96
37	23.00	14.00	32.73	29.34	34.44	-5.10	-3.39	-54.35
38	33.00	20.00	39.72	34.99	37.26	-2.28	-4.74	-59.08
39	26.00	16.00	34.83	31.22	35.29	-4.07	-3.60	-62.69
40	17.00	9.00	28.53	24.63	32.75	-8.12	-3.90	-66.59
41	35.00	31.00	41.12	45.34	37.82	7.51	4.22	-62.37
42	32.00	13.00	39.02	28.40	36.98	-8.58	-10.62	-72.99
43	22.00	16.00	32.03	31.22	34.16	-2.94	-.81	-73.80
44	39.00	24.00	43.92	38.75	38.95	-.20	-5.17	-78.97
45	27.00	25.00	35.52	39.69	35.57	4.12	4.17	-74.80
46	17.00	24.00	28.53	38.75	32.75	6.00	10.22	-64.58
47	30.00	33.00	37.62	47.22	36.41	10.80	9.60	-54.99
48	53.00	35.00	53.71	49.10	42.90	6.20	-4.61	-59.59
49	61.00	31.00	59.30	45.34	45.15	.19	-13.96	-73.56
50	55.00	16.00	55.10	31.22	43.46	-12.24	-23.88	-97.44
51	56.00	22.00	55.80	36.87	43.74	-6.87	-18.94	-116.38
52	55.00	17.00	55.10	32.16	43.46	-11.30	-22.94	-139.32
53	42.00	15.00	46.01	30.28	39.80	-9.52	-15.73	-155.05
54	35.00	12.00	41.12	27.46	37.82	-10.37	-13.66	-168.72
55	40.00	17.00	44.62	32.16	39.23	-7.07	-12.45	-181.17
56	15.00	11.00	27.13	26.52	32.19	-5.67	-.62	-181.79
57	21.00	16.00	31.33	31.22	33.88	-2.66	-.11	-181.89
58	33.00	11.00	39.72	26.52	37.26	-10.74	-13.20	-195.10

59	35.00	21.00	41.12	35.93	37.82	-1.90	-5.19	-200.29
60	21.00	15.00	31.33	30.28	33.88	-3.60	-1.05	-201.34
61	26.00	18.00	34.83	33.10	35.29	-2.18	-1.72	-203.06
62	36.00	25.00	41.82	39.69	38.11	1.58	-2.13	-205.19
63	31.00	26.00	38.32	40.63	36.70	3.93	2.31	-202.88
64	35.00	14.00	41.12	29.34	37.82	-8.49	-11.78	-214.66
65	38.00	21.00	43.22	35.93	38.67	-2.74	-7.29	-221.95
66	39.00	18.00	43.92	33.10	38.95	-5.85	-10.81	-232.77
67	45.00	28.00	48.11	42.51	40.64	1.87	-5.60	-238.36
68	45.00	37.00	48.11	50.98	40.64	10.34	2.87	-235.49
69	22.00	17.00	32.03	32.16	34.16	-2.00	.13	-235.36
70	17.00	16.00	28.53	31.22	32.75	-1.53	2.69	-232.67
71	21.00	12.00	31.33	27.46	33.88	-6.42	-3.87	-236.54
72	33.00	18.00	39.72	33.10	37.26	-4.16	-6.62	-243.16
73	23.00	33.00	32.73	47.22	34.44	12.78	14.49	-228.67
74	30.00	22.00	37.62	36.87	36.41	.45	-.76	-229.42
75	36.00	30.00	41.82	44.40	38.11	6.29	2.58	-226.85
76	37.00	16.00	42.52	31.22	38.39	-7.17	-11.30	-238.14
77	18.00	14.00	29.23	29.34	33.03	-3.69	.11	-238.03
78	22.00	7.00	32.03	22.76	34.16	-11.40	-9.27	-247.31
79	16.00	10.00	27.83	25.57	32.47	-6.89	-2.26	-249.56
80	27.00	12.00	35.52	27.46	35.57	-8.11	-8.07	-257.63
81	21.00	15.00	31.33	30.28	33.88	-3.60	-1.05	-258.68
82	37.00	14.00	42.52	29.34	38.39	-9.05	-13.18	-271.86
83	28.00	14.00	36.22	29.34	35.85	-6.51	-6.88	-278.74
84	31.00	15.00	38.32	30.28	36.70	-6.42	-8.04	-286.79
85	18.00	14.00	29.23	29.34	33.03	-3.69	.11	-286.68
86	35.00	14.00	41.12	29.34	37.82	-8.49	-11.78	-298.46
87	24.00	14.00	33.43	29.34	34.72	-5.39	-4.09	-302.55
88	24.00	16.00	33.43	31.22	34.72	-3.50	-2.21	-304.75
89	30.00	17.00	37.62	32.16	36.41	-4.25	-5.46	-310.21
90	36.00	16.00	41.82	31.22	38.11	-6.88	-10.60	-320.81
91	51.00	17.00	52.31	32.16	42.33	-10.17	-20.15	-340.96
92	42.00	12.00	46.01	27.46	39.80	-12.34	-18.56	-359.51
93	45.00	7.00	48.11	22.76	40.64	-17.89	-25.36	-384.87
94	35.00	11.00	41.12	26.52	37.82	-11.31	-14.60	-399.47
95	45.00	33.00	48.11	47.22	40.64	6.58	-.89	-400.36
96	37.00	18.00	42.52	33.10	38.39	-5.28	-9.41	-409.78
97	31.00	40.00	38.32	53.80	36.70	17.10	15.48	-394.30
98	28.00	14.00	36.22	29.34	35.85	-6.51	-6.88	-401.19
99	29.00	19.00	36.92	34.04	36.13	-2.09	-2.88	-404.06
100	40.00	23.00	44.62	37.81	39.23	-1.42	-6.81	-410.87
101	40.00	26.00	44.62	40.63	39.23	1.40	-3.98	-414.86
102	41.00	32.00	45.31	46.28	39.51	6.76	.96	-413.89
103	39.00	22.00	43.92	36.87	38.95	-2.08	-7.05	-420.94
104	30.00	28.00	37.62	42.51	36.41	6.10	4.89	-416.05
105	27.00	27.00	35.52	41.57	35.57	6.00	6.05	-410.00
106	59.00	22.00	57.90	36.87	44.59	-7.72	-21.03	-431.04
107	51.00	19.00	52.31	34.04	42.33	-8.29	-18.26	-449.30
108	33.00	18.00	39.72	33.10	37.26	-4.16	-6.62	-455.92
109	49.00	23.00	50.91	37.81	41.77	-3.96	-13.10	-469.02
110	43.00	36.00	46.71	50.04	40.08	9.96	3.33	-465.69
111	34.00	30.00	40.42	44.40	37.54	6.85	3.98	-461.72
112	33.00	18.00	39.72	33.10	37.26	-4.16	-6.62	-468.33
113	35.00	24.00	41.12	38.75	37.82	.93	-2.37	-470.70
114	39.00	13.00	43.92	28.40	38.95	-10.55	-15.52	-486.22
115	30.00	9.00	37.62	24.63	36.41	-11.78	-12.99	-499.21
116	30.00	16.00	37.62	31.22	36.41	-5.19	-6.40	-505.61
117	20.00	22.00	30.63	36.87	33.60	3.27	6.24	-499.37
118	43.00	19.00	46.71	34.04	40.08	-6.03	-12.67	-512.04
119	46.00	32.00	48.81	46.28	40.92	5.35	-2.53	-514.58
120	48.00	28.00	50.21	42.51	41.49	1.03	-7.70	-522.27
121	54.00	33.00	54.41	47.22	43.18	4.04	-7.19	-529.46
122	29.00	16.00	36.92	31.22	36.13	-4.91	-5.70	-535.16
123	34.00	25.00	40.42	39.69	37.54	2.15	-.73	-535.89
124	33.00	11.00	39.72	26.52	37.26	-10.74	-13.20	-549.10

125	33.00	39.00	39.72	52.86	37.26	15.60	13.14	-535.96
126	49.00	22.00	50.91	36.87	41.77	-4.90	-14.04	-550.00
127	37.00	21.00	42.52	35.93	38.39	-2.46	-6.59	-556.59
128	41.00	23.00	45.31	37.81	39.51	-1.71	-7.51	-564.10
129	50.00	31.00	51.61	45.34	42.05	3.29	-6.27	-570.37
130	36.00	26.00	41.82	40.63	38.11	2.53	-1.19	-571.56
131	18.00	30.00	29.23	44.40	33.03	11.36	15.16	-556.39
132	50.00	39.00	51.61	52.86	42.05	10.81	1.25	-555.14
133	40.00	29.00	44.62	43.45	39.23	4.22	-1.16	-556.30
134	34.00	42.00	40.42	55.68	37.54	18.14	15.26	-541.04
135	40.00	18.00	44.62	33.10	39.23	-6.13	-11.51	-552.55
136	40.00	24.00	44.62	38.75	39.23	-.48	-5.87	-558.42
137	32.00	31.00	39.02	45.34	36.98	8.36	6.32	-552.10
138	49.00	34.00	50.91	48.16	41.77	6.39	-2.75	-554.85
139	25.00	27.00	34.13	41.57	35.01	6.57	7.45	-547.40
140	32.00	29.00	39.02	43.45	36.98	6.48	4.43	-542.97
141	17.00	21.00	28.53	35.93	32.75	3.17	7.39	-535.58
142	27.00	15.00	35.52	30.28	35.57	-5.29	-5.24	-540.82
143	27.00	27.00	35.52	41.57	35.57	6.00	6.05	-534.77
144	27.00	34.00	35.52	48.16	35.57	12.59	12.64	-522.14
145	43.00	39.00	46.71	52.86	40.08	12.78	6.15	-515.99
146	26.00	20.00	34.83	34.99	35.29	-.30	.16	-515.83
147	23.00	23.00	32.73	37.81	34.44	3.37	5.08	-510.75
148	23.00	23.00	32.73	37.81	34.44	3.37	5.08	-505.67
149	19.00	12.00	29.93	27.46	33.31	-5.86	-2.47	-508.14
150	23.00	13.00	32.73	28.40	34.44	-6.04	-4.33	-512.47
151	35.00	19.00	41.12	34.04	37.82	-3.78	-7.07	-519.55
152	23.00	11.00	32.73	26.52	34.44	-7.93	-6.21	-525.76
153	27.00	20.00	35.52	34.99	35.57	-.58	-.54	-526.30
154	32.00	41.00	39.02	54.74	36.98	17.76	15.72	-510.58
155	29.00	37.00	36.92	50.98	36.13	14.85	14.06	-496.52
156	25.00	26.00	34.13	40.63	35.01	5.63	6.51	-490.01
157	39.00	27.00	43.92	41.57	38.95	2.62	-2.34	-492.36
158	28.00	44.00	36.22	57.56	35.85	21.71	21.34	-471.02
159	29.00	40.00	36.92	53.80	36.13	17.67	16.88	-454.14
160	33.00	46.00	39.72	59.44	37.26	22.18	19.72	-434.42
161	26.00	29.00	34.83	43.45	35.29	8.17	8.63	-425.79
162	40.00	36.00	44.62	50.04	39.23	10.81	5.43	-420.36
163	30.00	45.00	37.62	58.50	36.41	22.09	20.88	-399.48
164	24.00	37.00	33.43	50.98	34.72	16.26	17.56	-381.92
165	26.00	23.00	34.83	37.81	35.29	2.52	2.98	-378.94
166	33.00	44.00	39.72	57.56	37.26	20.30	17.84	-361.10
167	37.00	26.00	42.52	40.63	38.39	2.24	-1.89	-362.98
168	37.00	30.00	42.52	44.40	38.39	6.01	1.88	-361.10
169	36.00	20.00	41.82	34.99	38.11	-3.12	-6.83	-367.94
170	43.00	30.00	46.71	44.40	40.08	4.32	-2.32	-370.26
171	47.00	20.00	49.51	34.99	41.21	-6.22	-14.53	-384.78
172	43.00	14.00	46.71	29.34	40.08	-10.74	-17.37	-402.16
173	44.00	33.00	47.41	47.22	40.36	6.86	-.19	-402.35
174	48.00	32.00	50.21	46.28	41.49	4.79	-3.93	-406.28
175	43.00	32.00	46.71	46.28	40.08	6.20	-.44	-406.72
176	34.00	18.00	40.42	33.10	37.54	-4.44	-7.32	-414.03
177	34.00	19.00	40.42	34.04	37.54	-3.50	-6.38	-420.41
178	33.00	22.00	39.72	36.87	37.26	-.39	-2.85	-423.26
179	30.00	5.00	37.62	20.87	36.41	-15.54	-16.75	-440.01
180	25.00	18.00	34.13	33.10	35.01	-1.90	-1.02	-441.03
181	22.00	15.00	32.03	30.28	34.16	-3.88	-1.75	-442.78
182	34.00	25.00	40.42	39.69	37.54	2.15	-.73	-443.51
183	15.00	14.00	27.13	29.34	32.19	-2.85	2.21	-441.31
184	48.00	28.00	50.21	42.51	41.49	1.03	-7.70	-449.00
185	33.00	27.00	39.72	41.57	37.26	4.31	1.85	-447.15
186	28.00	16.00	36.22	31.22	35.85	-4.63	-5.00	-452.15
187	44.00	21.00	47.41	35.93	40.36	-4.43	-11.49	-463.64
188	35.00	13.00	41.12	28.40	37.82	-9.43	-12.72	-476.36
189	30.00	21.00	37.62	35.93	36.41	-.49	-1.70	-478.06
190	38.00	22.00	43.22	36.87	38.67	34.80	-6.35	-484.41

191	25.00	14.00	34.13	29.34	35.01	-5.67	-4.79	-489.19
192	32.00	29.00	39.02	43.45	36.98	6.48	4.43	-484.76
193	29.00	9.00	36.92	24.63	36.13	-11.50	-12.29	-497.05
194	22.00	20.00	32.03	34.99	34.16	.82	2.96	-494.09
195	26.00	30.00	34.83	44.40	35.29	9.11	9.57	-484.52
196	30.00	30.00	37.62	44.40	36.41	7.98	6.77	-477.75
197	29.00	14.00	36.92	29.34	36.13	-6.79	-7.58	-485.33
198	28.00	27.00	36.22	41.57	35.85	5.72	5.35	-479.98
199	28.00	22.00	36.22	36.87	35.85	1.02	.64	-479.34
200	24.00	27.00	33.43	41.57	34.72	6.85	8.15	-471.20
201	51.00	29.00	52.31	43.45	42.33	1.12	-8.85	-480.05
202	28.00	17.00	36.22	32.16	35.85	-3.69	-4.06	-484.11
203	33.00	17.00	39.72	32.16	37.26	-5.10	-7.56	-491.67
204	23.00	12.00	32.73	27.46	34.44	-6.99	-5.27	-496.94
205	39.00	9.00	43.92	24.63	38.95	-14.32	-19.28	-516.22
206	33.00	18.00	39.72	33.10	37.26	-4.16	-6.62	-522.84
207	55.00	29.00	55.10	43.45	43.46	-.01	-11.65	-534.49
208	41.00	20.00	45.31	34.99	39.51	-4.53	-10.33	-544.82
209	34.00	14.00	40.42	29.34	37.54	-8.20	-11.08	-555.90
210	38.00	12.00	43.22	27.46	38.67	-11.21	-15.76	-571.66
211	56.00	16.00	55.80	31.22	43.74	-12.52	-24.58	-596.24
212	47.00	14.00	49.51	29.34	41.21	-11.87	-20.17	-616.42
213	31.00	14.00	38.32	29.34	36.70	-7.36	-8.98	-625.40
214	47.00	26.00	49.51	40.63	41.21	-.57	-8.88	-634.28
215	53.00	42.00	53.71	55.68	42.90	12.79	1.98	-632.30
216	40.00	29.00	44.62	43.45	39.23	4.22	-1.16	-633.46
217	27.00	15.00	35.52	30.28	35.57	-5.29	-5.24	-638.71
218	40.00	20.00	44.62	34.99	39.23	-4.25	-9.63	-648.34
219	30.00	25.00	37.62	39.69	36.41	3.28	2.07	-646.27
220	36.00	20.00	41.82	34.99	38.11	-3.12	-6.83	-653.10
221	38.00	27.00	43.22	41.57	38.67	2.90	-1.64	-654.75
222	29.00	18.00	36.92	33.10	36.13	-3.03	-3.82	-658.57
223	30.00	15.00	37.62	30.28	36.41	-6.13	-7.34	-665.91
224	46.00	13.00	48.81	28.40	40.92	-12.53	-20.41	-686.32
225	26.00	22.00	34.83	36.87	35.29	1.58	2.04	-684.28
226	30.00	11.00	37.62	26.52	36.41	-9.90	-11.11	-695.39
227	29.00	15.00	36.92	30.28	36.13	-5.85	-6.64	-702.03
228	36.00	20.00	41.82	34.99	38.11	-3.12	-6.83	-708.87
229	49.00	34.00	50.91	48.16	41.77	6.39	-2.75	-711.61
230	46.00	33.00	48.81	47.22	40.92	6.29	-1.59	-713.21
231	42.00	29.00	46.01	43.45	39.80	3.66	-2.56	-715.77
232	25.00	16.00	34.13	31.22	35.01	-3.78	-2.91	-718.67
233	48.00	25.00	50.21	39.69	41.49	-1.80	-10.52	-729.19
234	49.00	26.00	50.91	40.63	41.77	-1.14	-10.28	-739.47
235	39.00	34.00	43.92	48.16	38.95	9.21	4.24	-735.23
236	40.00	25.00	44.62	39.69	39.23	.46	-4.93	-740.15
237	31.00	25.00	38.32	39.69	36.70	2.99	1.37	-738.78
238	42.00	43.00	46.01	56.62	39.80	16.83	10.61	-728.17
239	27.00	34.00	35.52	48.16	35.57	12.59	12.64	-715.54
240	44.00	28.00	47.41	42.51	40.36	2.15	-4.90	-720.44
241	39.00	24.00	43.92	38.75	38.95	-.20	-5.17	-725.60
242	29.00	16.00	36.92	31.22	36.13	-4.91	-5.70	-731.31
243	35.00	24.00	41.12	38.75	37.82	.93	-2.37	-733.68
244	30.00	33.00	37.62	47.22	36.41	10.80	9.60	-724.08
245	34.00	24.00	40.42	38.75	37.54	1.21	-1.67	-725.75
246	19.00	9.00	29.93	24.63	33.31	-8.68	-5.30	-731.05
247	31.00	18.00	38.32	33.10	36.70	-3.59	-5.22	-736.27
248	24.00	15.00	33.43	30.28	34.72	-4.44	-3.15	-739.41
249	55.00	19.00	55.10	34.04	43.46	-9.42	-21.06	-760.47
250	58.00	15.00	57.20	30.28	44.31	-14.03	-26.92	-787.40

	METRO2-RAW	CTBS2 RD-RAW	METRO2-T NAT	CTBS2 RD T NAT	PREDICTED CTBS	ACT-PRED CTBS	GAIN RD-MET	GAIN RD-MET.T
251	62.00	29.00	60.00	43.45	45.43	-1.98	-16.55	-16.55
252	34.00	27.00	40.42	41.57	37.54	4.03	1.15	-15.40
253	39.00	32.00	43.92	46.27	38.95	7.32	2.36	-13.04
254	36.00	34.00	41.82	48.16	38.11	10.05	6.34	-6.70
255	29.00	30.00	36.92	44.39	36.13	8.26	7.47	.77
256	35.00	42.00	41.12	55.68	37.82	17.86	14.56	15.33
257	41.00	37.00	45.31	50.98	39.51	11.46	5.66	21.00
258	32.00	38.00	39.02	51.92	36.98	14.94	12.90	33.90
259	23.00	22.00	32.73	36.87	34.44	2.43	4.14	38.04
260	34.00	39.00	40.42	52.86	37.54	15.32	12.44	50.48
261	33.00	18.00	39.72	33.10	37.26	-4.16	-6.62	43.86
262	36.00	29.00	41.82	43.45	38.11	5.35	1.63	45.49
263	32.00	37.00	39.02	50.98	36.98	14.00	11.96	57.45
264	23.00	19.00	32.73	34.05	34.44	-.40	1.32	58.77
265	26.00	15.00	34.83	30.28	35.29	-5.01	-4.54	54.23
266	44.00	35.00	47.41	49.10	40.36	8.74	1.68	55.91
267	44.00	19.00	47.41	34.05	40.36	-6.32	-13.37	42.54
268	48.00	15.00	50.21	30.28	41.49	-11.21	-19.93	22.62
269	39.00	19.00	43.92	34.05	38.95	-4.91	-9.87	12.75
270	54.00	37.00	54.41	50.98	43.18	7.80	-3.43	9.32
271	46.00	31.00	48.81	45.33	40.92	4.41	-3.48	5.84
272	37.00	26.00	42.52	40.63	38.39	2.24	-1.89	3.95
273	18.00	19.00	29.23	34.05	33.03	1.01	4.81	8.77
274	53.00	35.00	53.71	49.10	42.90	6.20	-4.61	4.16
275	36.00	24.00	41.82	38.75	38.11	.64	-3.07	1.09
276	43.00	15.00	46.71	30.28	40.08	-9.80	-16.43	-15.34
277	33.00	19.00	39.72	34.05	37.26	-3.22	-5.68	-21.02
278	38.00	31.00	43.22	45.33	38.67	6.66	2.12	-18.90
279	26.00	16.00	34.83	31.22	35.29	-4.06	-3.60	-22.50
280	54.00	47.00	54.41	60.39	43.18	17.21	5.98	-16.52
281	49.00	31.00	50.91	45.33	41.77	3.56	-5.58	-22.10
282	39.00	14.00	43.92	29.34	38.95	-9.61	-14.57	-36.67
283	21.00	16.00	31.33	31.22	33.88	-2.66	-.11	-36.78
284	26.00	28.00	34.83	42.51	35.29	7.22	7.69	-29.09
285	36.00	24.00	41.82	38.75	38.11	.64	-3.07	-32.16
286	49.00	28.00	50.91	42.51	41.77	.74	-8.40	-40.56
287	37.00	27.00	42.52	41.57	38.39	3.18	-.95	-41.50
288	36.00	30.00	41.82	44.39	38.11	6.29	2.58	-38.93
289	34.00	32.00	40.42	46.27	37.54	8.73	5.86	-33.07
290	25.00	22.00	34.13	36.87	35.01	1.86	2.74	-30.33
291	47.00	36.00	49.51	50.04	41.21	8.83	.53	-29.81
292	48.00	26.00	50.21	40.63	41.49	-.86	-9.58	-39.38
293	29.00	14.00	36.92	29.34	36.13	-6.79	-7.58	-46.97
294	33.00	25.00	39.72	39.69	37.26	2.43	-.03	-47.00
295	39.00	12.00	43.92	27.46	38.95	-11.49	-16.46	-63.45
296	36.00	18.00	41.82	33.10	38.11	-5.00	-8.71	-72.17
297	23.00	10.00	32.73	25.58	34.44	-8.86	-7.15	-79.32
298	35.00	19.00	41.12	34.05	37.82	-3.78	-7.07	-86.39
299	23.00	6.00	32.73	21.82	34.44	-12.63	-10.91	-97.30
300	19.00	13.00	29.93	28.40	33.31	-4.91	-1.53	-98.83
301	32.00	22.00	39.02	36.87	36.98	-.11	-2.15	-100.98
302	28.00	21.00	36.22	35.93	35.85	.08	-.30	-101.28
303	29.00	25.00	36.92	39.69	36.13	3.56	2.77	-98.51
304	36.00	25.00	41.82	39.69	38.11	1.58	-2.13	-100.64
305	23.00	14.00	32.73	29.34	34.44	-5.10	-3.39	-104.03
306	31.00	23.00	38.32	37.81	36.70	1.11	-.51	-104.54
307	29.00	23.00	36.92	37.81	36.13	1.68	.89	-103.66
308	39.00	15.00	43.92	30.28	38.95	-8.67	-13.63	-117.29

309	21.00	13.00	31.33	28.40	33.88	-5.48	-2.93	-120.22
310	23.00	32.00	32.73	46.27	34.44	11.83	13.55	-106.67
311	27.00	14.00	35.52	29.34	35.57	-6.23	-6.18	-112.85
312	22.00	6.00	32.03	21.82	34.16	-12.34	-10.21	-123.07
313	37.00	19.00	42.52	34.05	38.39	-4.34	-8.47	-131.54
314	31.00	20.00	38.32	34.99	36.70	-1.71	-3.34	-134.88
315	34.00	11.00	40.42	26.52	37.54	-11.02	-13.90	-148.78
316	44.00	27.00	47.41	41.57	40.36	1.21	-5.84	-154.62
317	40.00	17.00	44.62	32.16	39.23	-7.07	-12.45	-167.07
318	32.00	19.00	39.02	34.05	36.98	-2.93	-4.98	-172.04
319	41.00	22.00	45.31	36.87	39.51	-2.65	-8.45	-180.49
320	40.00	40.00	44.62	53.80	39.23	14.57	9.19	-171.31
321	26.00	10.00	34.83	25.58	35.29	-9.71	-9.25	-180.55
322	32.00	30.00	39.02	44.39	36.98	7.41	5.37	-175.18
323	55.00	24.00	55.10	38.75	43.46	-4.71	-16.36	-191.54
324	41.00	22.00	45.31	36.87	39.51	-2.65	-8.45	-199.98
325	23.00	14.00	32.73	29.34	34.44	-5.10	-3.39	-203.37
326	38.00	25.00	43.22	39.69	38.67	1.02	-3.53	-206.90
327	47.00	28.00	49.51	42.51	41.21	1.31	-7.00	-213.90
328	45.00	38.00	48.11	51.92	40.64	11.28	3.81	-210.09
329	46.00	12.00	48.81	27.46	40.92	-13.46	-21.35	-231.44
330	30.00	23.00	37.62	37.81	36.41	1.39	.19	-231.25
331	36.00	7.00	41.82	22.76	38.11	-15.35	-19.06	-250.32
332	41.00	18.00	45.31	33.10	39.51	-6.41	-12.21	-262.53
333	47.00	21.00	49.51	35.93	41.21	-5.28	-13.58	-276.11
334	46.00	37.00	48.81	50.98	40.92	10.05	2.17	-273.94
335	33.00	13.00	39.72	28.40	37.26	-8.86	-11.32	-285.26
336	34.00	15.00	40.42	30.28	37.54	-7.26	-10.14	-295.40
337	37.00	32.00	42.52	46.27	38.39	7.89	3.76	-291.64
338	38.00	26.00	43.22	40.63	38.67	1.96	-2.59	-294.23
339	38.00	21.00	43.22	35.93	38.67	-2.74	-7.29	-301.52

APPENDIX B

COMPARISONS OF HIGH AND LOW PROJECT SUCCESS SCHOOLS

1. Differences in CTBS Total Reading Scores between High and Low Project Success Schools

2. Differences in CTBS Total Reading Scores between Chapter 1 and Non-Chapter 1 Polaris Project Students (Only students from High and Low Project Success Schools)

3. Differences in MRT Pre-Reading Skills Composite Scores between High and Low Project Success Schools

4. Differences in Numbers of Students Served between High and Low Project Success Schools

Regression Analysis

Dependent var: CTBS RD T NAT
Range: 17 to 147 # Obs: 131

Variable	Coeff	Std err	T-stat
Constant	31.68	.80	39.39
PROJ. SUCCESS	11.94	1.16	10.29

R-sq:	.45	Corr R-sq:	.45
SER:	6.63	SSR:	5674.31
F(1,129)=	105.98	DW:	1.76

Regression Analysis

Dependent var: CTBS RD T NAT
Range: 17 to 147 # Obs: 131

Variable	Coeff	Std err	T-stat
Constant	36.74	1.35	27.27
CHAPTER 1	1.03	1.65	.62

R-sq:	.00	Corr R-sq:	-.00
SER:	8.94	SSR:	>>>>>>>
F(1,129)=	.39	DW:	1.03

Regression Analysis

Dependent var: METRO-T NAT
Range: 17 to 147 # Obs: 131

Variable	Coeff	Std err	T-stat
Constant	39.95	.81	49.60
PROJ. SUCCESS	-.61	1.16	-.53

R-sq:	.00	Corr R-sq:	-.01
SER:	6.64	SSR:	5689.49
F(1,129)=	.28	DW:	1.28

EFFECTS OF NUMBER IDENTIFIED ON SUCCESS

HIGH SUCCESS	LOW SUCCESS
15	6
10	18
13	20
5	6
6	5
10	14
17	5
8	4
10	4

THE T VALUE IS .5314995

THE DEGREES OF FREEDOM ARE 16
THE NUMBER OF SCORES IN GROUP 1 IS 9
THE NUMBER OF SCORES IN GROUP 2 IS 9
THE SUM OF SCORES IN GROUP 1 IS 94
THE SUM OF SCORES IN GROUP 2 IS 82

THE MEAN FOR GROUP 1 IS 10.44444
THE MEAN FOR GROUP 2 IS 9.111111
THE STANDARD DEVIATION FOR GROUP 1 IS 3.972125
THE STANDARD DEVIATION FOR GROUP 2 IS 6.39227

APPENDIX C

2 x 2 CHI-SQUARE ANALYSES OF RETENTION RATES

1. Retained/Promoted and School Years (1981-82 and 1982-83)

2. Retained/Promoted (1982-83) and High/Low Project Success

3. Retained/Promoted (1981-82) and High/Low Project Success

4. Retained/Promoted (High Project Success) and School Years (1981-82 and 1982-83)

5. Retained/Promoted (Low Project Success) and School Years (1981-82 and 1982-83)

Note: A chi-square value larger than 3.8, with one df, is significant at the 0.05 level.

RETAINED/PROMOTED AND SCHOOL YEARS (1981-82 AND 1982-83)

CHI-SQUARE IS 1.946799E-02

PHI COEFFIENT IS 1.70728E-03

SUM OF ROW 1 IS 917
SUM OF ROW 2 IS 5762
SUM OF COLUMN 1 IS 3372
SUM OF COLUMN 2 IS 3307

RETAINED/PROMOTED (1982-83) AND HIGH/LOW PROJECT SUCCESS

CHI-SQUARE IS 9.884833

PHI COEFFIENT IS .1082215

SUM OF ROW 1 IS 160
SUM OF ROW 2 IS 684
SUM OF COLUMN 1 IS 432
SUM OF COLUMN 2 IS 412

RETAINED/PROMOTED (1981-82) AND HIGH/LOW PROJECT SUCCESS

CHI-SQUARE IS 2.064716

PHI COEFFIENT IS 5.011806E-02

SUM OF ROW 1 IS 139
SUM OF ROW 2 IS 683
SUM OF COLUMN 1 IS 430
SUM OF COLUMN 2 IS 392

RETAINED/PROMOTED (HIGH PROJECT SUCCESS) AND SCHOOL YEARS(1981-82 AND 1982-83)

CHI-SQUARE IS 1.538996E-02

PHI COEFFIENT IS 4.225373E-03

SUM OF ROW 1 IS 129
SUM OF ROW 2 IS 733
SUM OF COLUMN 1 IS 430
SUM OF COLUMN 2 IS 432

RETAINED/PROMOTED (LOW PROJECT SUCCESS) AND SCHOOL YEARS (1981-82 AND 1982-83)

CHI-SQUARE IS 2.357314

PHI COEFFIENT IS 5.414779E-02

SUM OF ROW 1 IS 170
SUM OF ROW 2 IS 634
SUM OF COLUMN 1 IS 392
SUM OF COLUMN 2 IS 412

APPENDIX D

FIRST GRADE RETENTION RATES BY SCHOOL

1. Number of Retentions

    a. Column 1 - 1982-83
    b. Column 3 - 1981-82

2. Total Enrollment (Promotions and Retentions)

    a. Column 2 - 1982-83
    b. Column 4 - 1981-82

3. First Grade Retention Rates

    a. Column 5 - 1982-83
    b. Column 6 - 1981-82

4. Changes in Retention Rates: 1982-83 - 1981-82
   (Note: Negative Numbers = Decreased Retention Rate): Column 7

5. Numbers and Corresponding School Names

	# RETENT 82/83	ENROLLMT 82/83	# RETENT 81/82	ENROLLMT 81/82	RET.RATE 82/83	RET.RATE 81/82	82/83-81/82
1	0.00	19.00	2.00	18.00	0.00	11.11	-11.11
2	10.00	62.00	9.00	62.00	16.13	14.52	1.61
3	5.00	34.00	4.00	37.00	14.71	10.81	3.90
4	13.00	66.00	15.00	71.00	19.70	21.13	-1.43
5	0.00	26.00	2.00	35.00	0.00	5.71	-5.71
6	4.00	52.00	8.00	48.00	7.69	16.67	-8.97
7	4.00	25.00	4.00	23.00	16.00	17.39	-1.39
8	1.00	48.00	4.00	43.00	2.08	9.30	-7.22
9	5.00	35.00	3.00	28.00	14.29	10.71	3.57
10	1.00	36.00	1.00	43.00	2.78	2.33	.45
11	2.00	36.00	12.00	34.00	5.56	35.29	-29.74
12	7.00	35.00	8.00	35.00	20.00	22.86	-2.86
13	32.00	90.00	26.00	98.00	35.56	26.53	9.02
14	8.00	40.00	3.00	36.00	20.00	8.33	11.67
15	8.00	46.00	6.00	37.00	17.39	16.22	1.18
16	19.00	62.00	11.00	48.00	30.65	22.92	7.73
17	6.00	61.00	16.00	62.00	9.84	25.81	-15.97
18	5.00	47.00	7.00	46.00	10.64	15.22	-4.58
19	14.00	82.00	14.00	89.00	17.07	15.73	1.34
20	2.00	55.00	0.00	66.00	3.64	0.00	3.64
21	4.00	32.00	4.00	27.00	12.50	14.81	-2.31
22	6.00	51.00	2.00	55.00	11.76	3.64	8.13
23	7.00	24.00	6.00	24.00	29.17	25.00	4.17
24	1.00	22.00	2.00	34.00	4.55	5.88	-1.34
25	10.00	51.00	13.00	51.00	19.61	25.49	-5.88
26	0.00	9.00	1.00	15.00	0.00	6.67	-6.67
27	5.00	54.00	4.00	65.00	9.26	6.15	3.11
28	11.00	48.00	6.00	40.00	22.92	15.00	7.92
29	2.00	26.00	1.00	9.00	7.69	11.11	-3.42
30	2.00	34.00	5.00	52.00	5.88	9.62	-3.73
31	10.00	63.00	7.00	53.00	15.87	13.21	2.67
32	10.00	63.00	9.00	61.00	15.87	14.75	1.12
33	7.00	25.00	1.00	21.00	28.00	4.76	23.24
34	2.00	48.00	4.00	49.00	4.17	8.16	-4.00
35	0.00	35.00	0.00	23.00	0.00	0.00	0.00
36	0.00	55.00	7.00	57.00	0.00	12.28	-12.28
37	6.00	34.00	0.00	28.00	17.65	0.00	17.65
38	3.00	17.00	6.00	27.00	17.65	22.22	-4.58
39	4.00	51.00	3.00	57.00	7.84	5.26	2.58
40	1.00	14.00	2.00	21.00	7.14	9.52	-2.38
41	1.00	21.00	1.00	26.00	4.76	3.85	.92
42	9.00	42.00	9.00	53.00	21.43	16.98	4.45
43	10.00	58.00	14.00	68.00	17.24	20.59	-3.35
44	12.00	39.00	11.00	27.00	30.77	40.74	-9.97
45	3.00	33.00	3.00	31.00	9.09	9.68	-.59
46	2.00	41.00	2.00	37.00	4.88	5.41	-.53
47	1.00	29.00	1.00	42.00	3.45	2.38	1.07
48	3.00	41.00	6.00	33.00	7.32	18.18	-10.86
49	11.00	39.00	4.00	33.00	28.21	12.12	16.08
50	1.00	16.00	1.00	16.00	6.25	6.25	0.00
51	1.00	32.00	0.00	34.00	3.13	0.00	3.13
52	2.00	20.00	2.00	18.00	10.00	11.11	-1.11
53	7.00	89.00	18.00	75.00	7.87	24.00	-16.13
54	14.00	73.00	7.00	83.00	19.18	8.43	10.74
55	6.00	93.00	4.00	84.00	6.45	4.76	1.69
56	10.00	83.00	20.00	96.00	12.05	20.83	-8.79
57	5.00	17.00	3.00	25.00	29.41	12.00	17.41
58	10.00	63.00	10.00	64.00	15.87	15.63	.25

59	5.00	57.00	10.00	62.00	8.77	16.13	-7.36
60	2.00	33.00	4.00	33.00	6.06	12.12	-6.06
61	5.00	33.00	4.00	38.00	15.15	10.53	4.63
62	3.00	46.00	7.00	58.00	6.52	12.07	-5.55
63	13.00	54.00	6.00	55.00	24.07	10.91	13.16
64	1.00	21.00	0.00	16.00	4.76	0.00	4.76
65	15.00	63.00	12.00	63.00	23.81	19.05	4.76
66	10.00	57.00	5.00	52.00	17.54	9.62	7.93
67	0.00	17.00	0.00	22.00	0.00	0.00	0.00
68	12.00	41.00	4.00	47.00	29.27	8.51	20.76
69	3.00	32.00	5.00	34.00	9.38	14.71	-5.33
70	6.00	29.00	8.00	27.00	20.69	29.63	-8.94
71	7.00	49.00	13.00	44.00	14.29	29.55	-15.26
72	3.00	38.00	6.00	43.00	7.89	13.95	-6.06
73	8.00	54.00	7.00	38.00	14.81	18.42	-3.61
74	2.00	34.00	4.00	40.00	5.88	10.00	-4.12
75	2.00	24.00	1.00	38.00	8.33	2.63	5.70
76	8.00	48.00	8.00	46.00	16.67	17.39	-.72
77	3.00	10.00	1.00	18.00	30.00	5.56	24.44
78	3.00	25.00	2.00	25.00	12.00	8.00	4.00

	# RETENT 82/83	ENROLLMT 82/83	# RETENT 81/82	ENROLLMT 81/82	RET.RATE 82/83	RET.RATE 81/82	82/83-81/82
Count	78.00	78.00	78.00	78.00	78.00	78.00	78.00
Minimum	0.00	9.00	0.00	9.00	0.00	0.00	-29.74
Maximum	32.00	93.00	26.00	98.00	35.56	40.74	24.44
Mean	5.85	42.40	5.91	43.23	13.01	12.87	.14
Var	27.26	360.01	25.83	381.72	77.83	71.10	80.79
Std Dev	5.22	18.97	5.08	19.54	8.82	8.43	8.99

Range: 1 to 78

NUMBERS AND CORRESPONDING
SCHOOL NAMES

1 Alban
2 Alum Creek
3 Andrews Heights
4 Anne Bailey
5 Baker
6 Belle
7 Belvil
8 Big Chimney
9 Bonham
10 Boreman
11 Bridge
12 Buena Vista
13 Cedar Grove
14 Central
15 Chamberlain
16 Chandler
17 Chelyan
18 Chesapeake
19 Clendenin
20 Cross Lanes
21 Decota
22 Dunbar
23 Edison
24 Elkview
25 Fairview
26 Fernbank
27 Flinn
28 Ford
29 Fort Hill
30 Frame
31 Glenwood
32 Grandview
33 Grant
34 High Lawn
35 Holz
36 Kanawha City
37 Kenna
38 Kenton
39 Lakewood
40 Littlepage
41 Loudendale
42 Malden
43 Marmet
44 Mary Ingles
45 Midland Trail
46 Midway
47 Montrose
48 Mound
49 Nitro
50 Oakwood
51 Overbrook
52 Parkway
53 Piedmont
54 Pinch
55 Point Harmony
56 Pratt
57 Rand
58 Richmond
59 Robins
60 Roxalana
61 Ruffner
62 Ruthlawn
63 Sharon Dawes
64 Shoals
65 Sissonville
66 Spring Hill
67 Staunton
68 Taft
69 Tiskelwah
70 Tyler
71 Valley Grove
72 Village
73 Wallace Heights
74 Watts
75 Weberwood
76 Weimer
77 West Sattes
78 Woodlawn

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